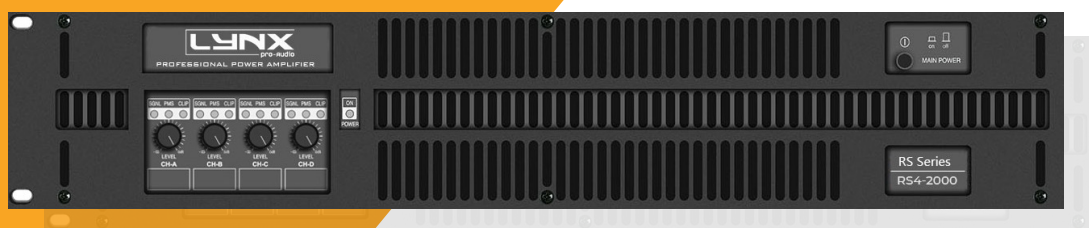


RS series

USER MANUAL



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CE CERTIFICATION, EUROPEAN PRODUCT

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WELCOME

Just contact the new generation of digital amplifiers RS, designed and manufactured by Lynx Pro Audio S.L.

Before working with the amplifier we recommend that you read this manual, in its pages you will find instructions for use, programming examples and practical advice that will be of great help.

The RS Series become a working tool of great value, providing the user with the best solutions in the market with the highest level of accuracy and a host of features for the professional.

We hope that as a user you will be completely satisfied. We are sure that the RS Series will meet your expectations and make it easier for you to get the most out of your system.

IMPORTANT SAFETY INSTRUCTIONS

The CE mark of the **RS** amplifier shows that it is verified and tested to accomplish the European Norms and International Norms about Electromagnetic Compatibility and Electrical Safety.



Radiated Emissions : EN55013-1 (1996)
RF Immunity: EN55103-2 (1996)
Electical Safety: EN60065 (1993)
IEC65 (1985) and emendation 1, 2 and 3

This product also meets the specifications of the following safety directives:

Low Voltage Directive 73/23/EEC

EMC Directive 89/336/EEC



Product Developed and Manufactured in the European Union.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrowpoint in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that is necessary for the user to refer to the owner's manual.

Warning :

- Do not expose the amplifier to humidity and dust.**
- Do not take off the top cover.**
- Do not handle internal elements to avoid electrical shock.**
- Use only power cords in good condition.**

Unpacking the RS

Before unpacking your new amplifier, verify that the box does not show any damage or deformation. If this happens, please claim the damage to your forwarder. Once unpacked and verified its correct operation, keep the original box in case you need to ship it back to your provider.

1. INTRODUCTION

The RS Series, is the result of an in depth study, in order to reach the best compromise between economy and performances, taking advantage of latest improvements in automated mixed surface mount and through hole electronic assembly.

The RS Series are a project based on an up-side-down mono-block approach offering an all-in-one power module that contains the entire amplifier assembly. Simplicity and effectiveness run hand by hand through the entire design to obtain an effectively skilled and workable product.

The last generation QuantaPulse™ switching power supply allows to reach a new level of refined sensing and control of the power flow.

Main characteristics

- Unmatched audio quality hi efficiency Class H design.
- 2/4 Channels models from 1000W up to 4000W.
- Ultra light weight 6kg, compact package 25cm deep.
- Last generation QuantaPulse™ switch mode power supply
- Power Management System (PMS™) and Clip Limiter (ICL™).
- Up-side-down design to avoid fan dust acumulation.
- Industry standard Neutrik® XLR and Speakon® connectors.
- Comprehensive protection set (ICL, PMS, SSP, turn-on, Temp, DC....)
- Detented sealed potentiometers.
- Dual or bridge mode operation.
- Temperature controlled, back to front cooling fan.

2. CONTROLS

Front panel

01. SIGNAL ATTENUATION LEVEL CONTROL KNOBS

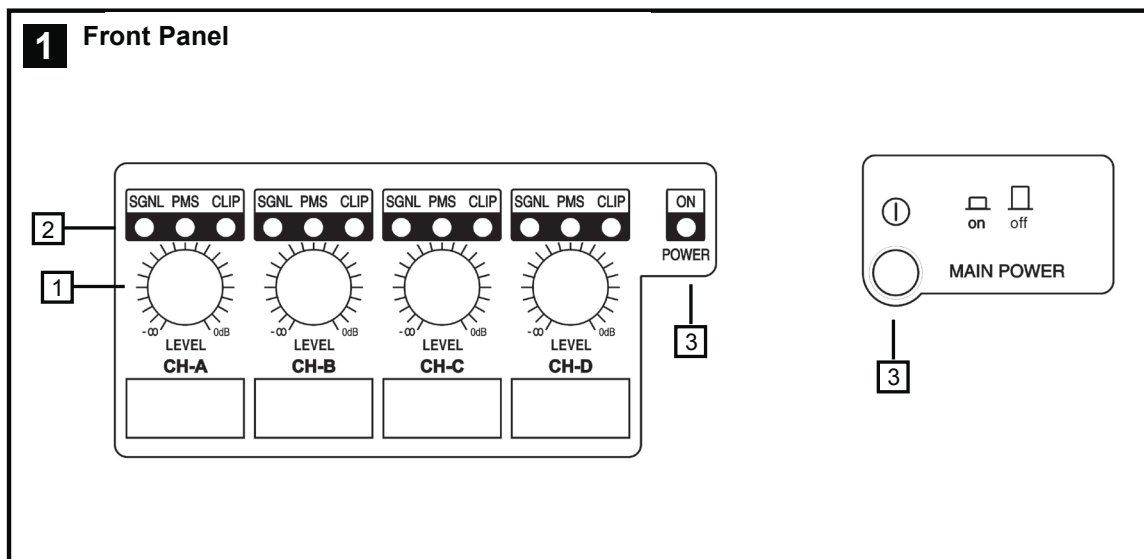
Permit independent control of each channel's attenuation (21 steps).

02.

- **SIGNAL:** This LED indicates presence of signal at the inputs.
- **PMS:** LED indicating PMS in operation.
- **CLIP:** LED indicating Intelligent Clip Limiter in operation.

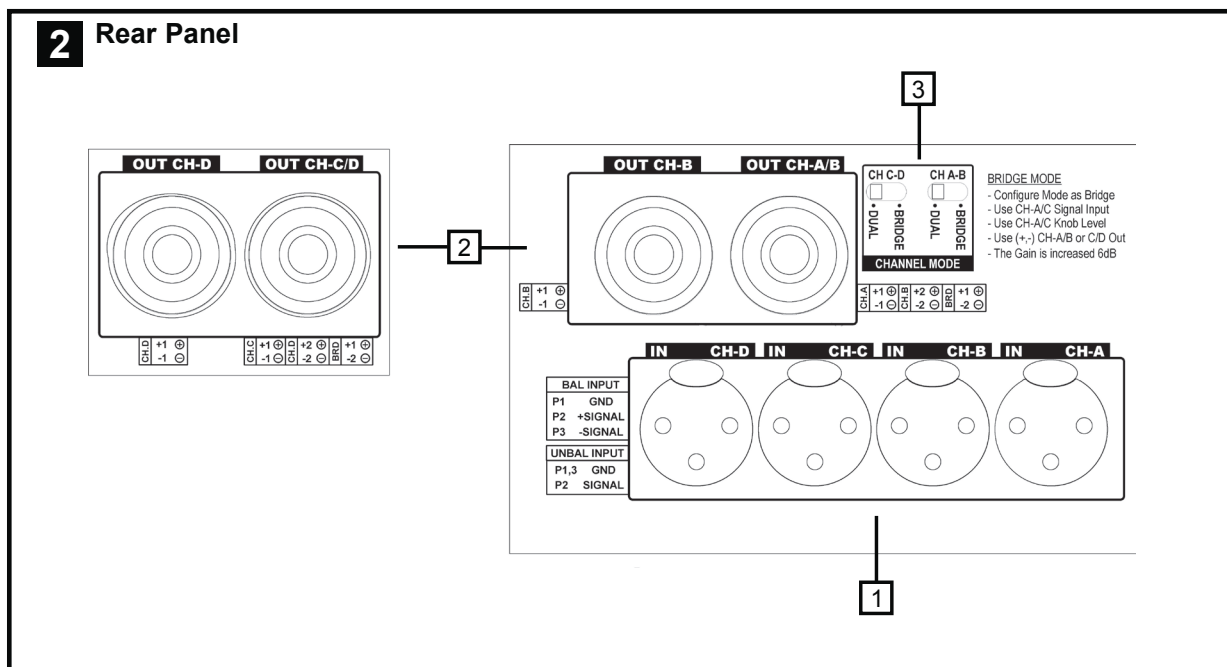
02.MAIN POWER SWITCH

- **Position I:** Connects the amplifier's current feed.
- **Position O:** Disconnects the Power.



Rear panel

01. **SIGNAL INPUT:** Female Neutrik® XLR Connectors for the amplifier's signal input.
02. **SPEAKER CONNECTORS:**
Neutrik®. Speakon to connect the speakers.
03. **DUAL/ BRIDGE:**
Operation Selection Switch. To control the level in Bridge mode use the CH-A level knob.
04. **MAINS POWER CORD:**
Gain Selection minidips 1 and 2: Three positions for 32, 38 or 44dB Gain, (Default setting 32dB).
05. **MODE SELECTION MINIDIPS:**
To connect the amplifier to the mains network. The colour code is:
 - **Blue:** Neutral
 - **Brown:** Live, single phase
 - **Yellow-green:** Protective Earth



3. INSTALLATION AND OPERATION

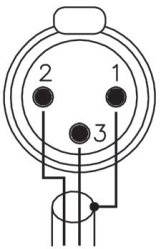
Connections

The Power switch must always be on the “Off” position before plugging the amp to a properly mains socket (170-265V AC). The colour code is:

- **Blue:** Neutral
- **Brown:** Live, single phase
- **Yellow-green:** Protective Earth

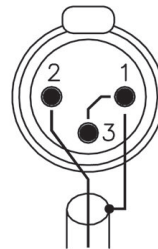
The input signal fed to the amplifier can be either balanced or un-balanced. The drawing below describes both ways to wire an XLR connector for the purpose.

- **Balanced Signal:** Connect pin 1 to Ground, pin 2 to Signal + (hot) and pin 3 to Signal - (cold).
- **Unbalanced Signal:** Connect Pin 1 to Ground, pin 2 to Signal and pin 3 to Ground.



Balanced Wiring

- 1- Ground
- 2- Signal +
- 3- Signal -



Unbalanced Wiring

- 1- Ground
- 2- Signal
- 3- Ground

Important!: If a connection is done with a un-balanced line and pin 3 on the XLR is not connected to ground, a 6 dB loss occurs in the line and only a quarter of the amplifier power is produced.

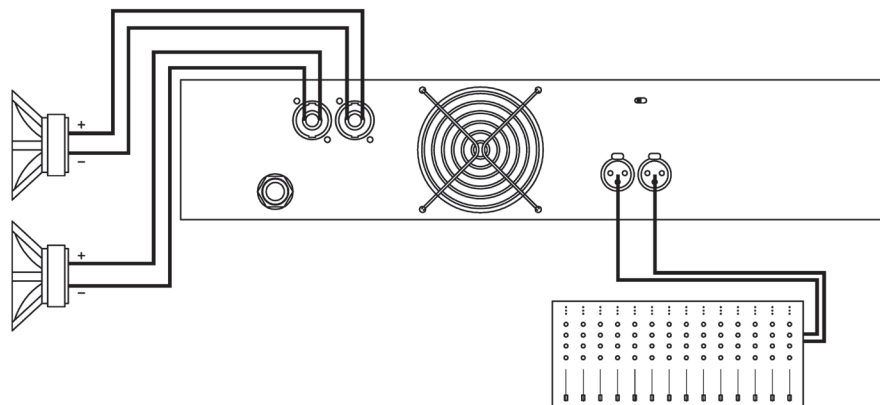
The amplifiers provides, for each channel, a female XLR Connector (Signal Input) paralleled to a male XLR to daisy chain several amplifiers with the same signal line (LINK).

The amplifier can operate on two different configurations: DUAL or LINK. The connections for the three modes are different.

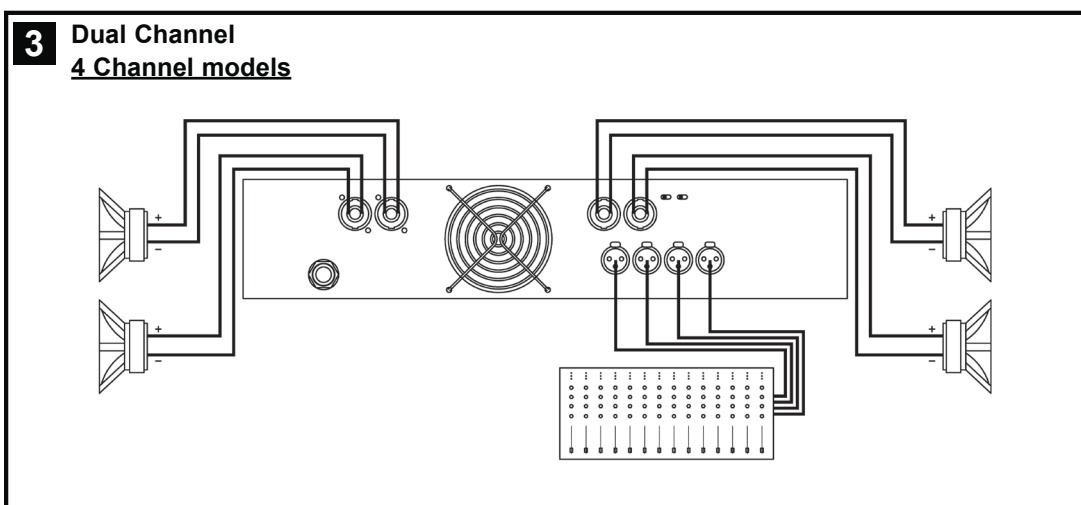
DUAL Channel mode

- Set the Amplifier Mode to “DUAL”.
- Connect the signal lines to the female XLR connectors on all channels.
- Connect the speakers' lines to the corresponding Speakon on the amplifier respecting the polarity.
- Use the level control knob on the front panel to adjust each channel independently.
- Each signalling LED group will show its corresponding channel status.

3 Dual Channel 2 Ch models

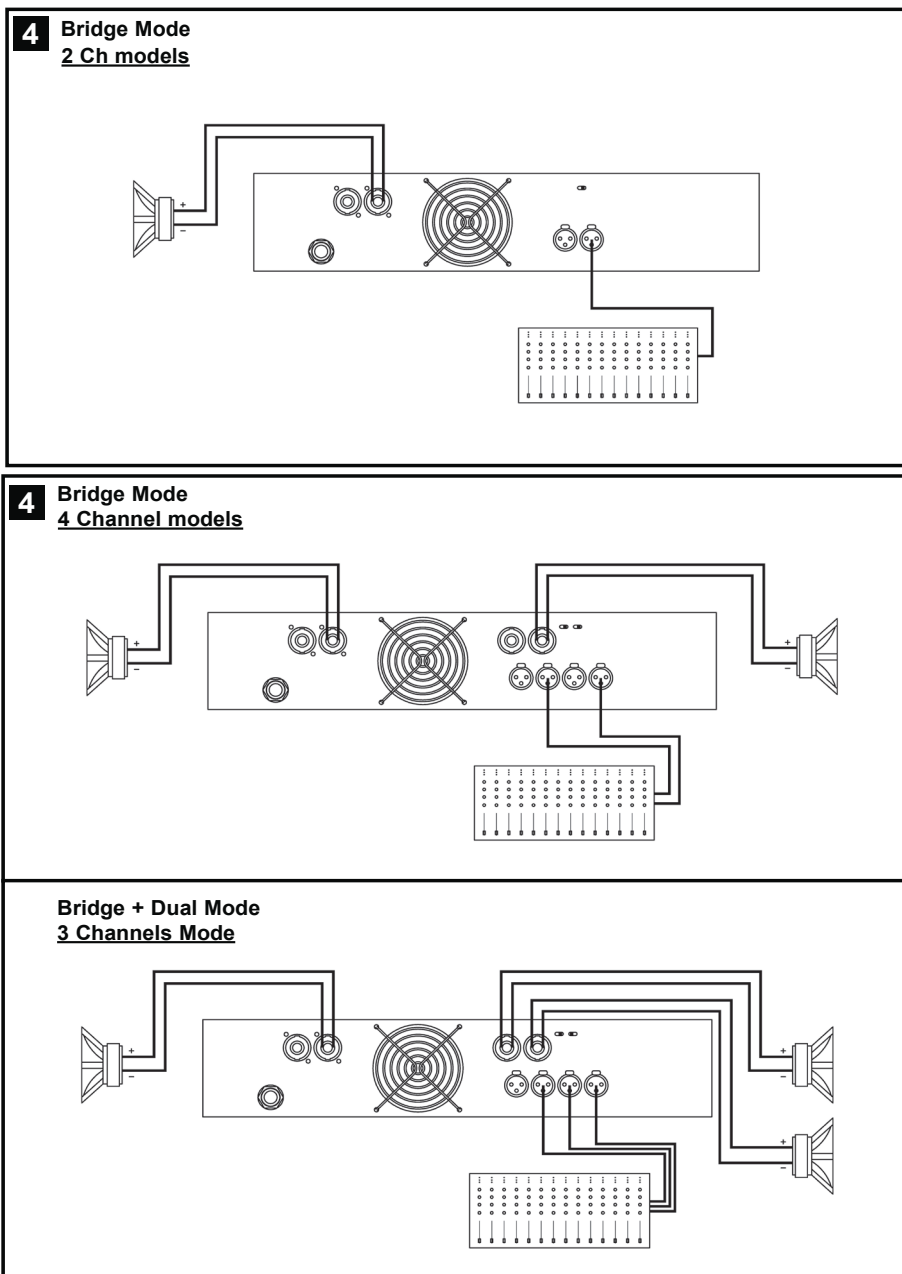


3 Dual Channel 4 Channel models



BRIDGE Channel mode

- Set the configuration mode to “BRIDGE”
- Connect a signal line to input female XLR Channel “A” (or Ch-C in 4 channel models).
- Connect the speaker line to the Channel A Speakon (or Ch-C in 4 channel models) wired to +1 and 2. In this way pin +1 is positive.
- Use Channel-A (or Ch-C in 4 channel modes) control knob to adjust the amp’s output.
- The signalling LED groups will show the single channel status.









4. TROUBLESHOOTING




In the event of incorrect connection or malfunctioning, the amp will activate one or more of its LED to warn about the problem.

   **Correct function:** SGNL lights to indicate signal presence.

   **ICL:** The Intelligent Clip Limiter is operating

   **No Signal:** No Input Signal is reaching the amp.

   **Overheating:** The amplifier has reached the maximum operational temperature. Most common cause is: the normal air flow is blocked, accumulated dirt, dust or object leaning against the grill. Check and clean periodically.

   **PMS:** Several causes can trigger this LED, most common are:

- The amplifier is in power-on sequence, where output is inhibited until the amp circuits are ready to operate.
- The internal temperatures rise to near thermal shutdown point due to unfavourable operating conditions.
- Excessive current consumption.

PMS™ - Power Management System

This is a complete set of protections that monitors the main amp parameters (load status, signal input, temperature, current, etc.) in order to draw from the power supply only the precise amount of current required to maintain safe operation during hazardous or extreme working conditions.

This system controls the amount of power that the amp delivers under three basic circumstances:

- 1.- The power-on sequence, where output is inhibited until the amp circuits are ready to operate. This routine is repeated at every restart, not just when the power switch is activated.
- 2.- When internal temperatures rise to near thermal shutdown point due to unfavourable operating conditions. Here the system takes control, restricting current so as to maintain operational continuity at the precise power level which the amp is capable of withstanding at that particular moment.
- 3.- Excessive mains current consumption. This event only occurs either under laboratory conditions (long term sinusoidal signal testing with dummy loads) or, for example, in field applications in conditions of prolonged acoustic howl-round. Here PMS takes control to avoid any damage to the speakers and to prevent the mains breaker from tripping or the fuses blowing.

ICL2™ - Intelligent Clip Limiter

The ICL2 is an anticlip system to avoid speaker failure and provide more acceptable sound quality even when clipping occurs. With the ICL2 system you don't lose the music "punch" but the speakers are kept under control.

SSP™ - SOA Sentry Protection

SOA Sentry protection effectively limiting the power that the amp could deliver into an incorrect load or to a direct short-circuit. This avoids power transistor failure.

5. TECHNICAL SPECIFICATIONS

	RS2 - 1000	RS2 - 1500	RS2 - 2000	RS2 - 3600
Max. Output power				
@ 2 Ohms	2x 500 W	2x 750 W	2x 1000 W	2x 1800 W
@ 4 Ohms	2x 400 W	2x 700 W	2x 1000 W	2x 1750 W
@ 8 Ohms	2x 240 W	2x 450 W	2x 650 W	2x 950 W
Bridge @ 4 Ohms	1000 W	1500 W	2000 W	3600 W
Bridge @ 8 Ohms	800 W	1400 W	2000 W	3500 W
Frequency Response Power Bandwidth ±0.25dB	20Hz-20kHz			
Phase Response @ 1 watt 20Hz-20kHz	±15 deg			
Total Harmonic Distortion 20Hz-20kHz	<0.05%			
Intermodulation Distortion SMPTE	<0.05%			
Damping Factor 20-500Hz @ 8 Ohm	>500			
Crosstalk 20Hz-1kHz	>75dB			
Voltage Gain	32dB			
Sensitivity Rated Power (32/38/44dB Gain)	1.1 V	1.5 V	1.8 V	2.2 V
Signal-to-Noise Ratio 20Hz-20kHz	101 dBA	103 dBA	104 dBA	105 dBA
Required AC Mains Operating Voltage (50Hz-60Hz) Power On Idling (@ 230V) 1/8 Rated Power @ 4 Ohm (@ 230V) (*limited by PMS for fuse saver protection)	170V-265V AC			
	0.5 A	0.5 A	0.5 A	0.5 A
	3.5 A	4A	5 A	10 A
Dimensions W x H x D (mm) W x H x D (inches)	483 x 88.9 x 254 19 x 3.5 x 10			
Weight Net (kg - lbs)	5-11	5-11	6-13	6-13
Protections	Soft-start, Turn-on Turn-off transients, Over-heating, DC, RF, Short-circuit, Open or mismatched loads, ICL™, PMS™ and SSP™			

	RS4 - 2000	RS4 - 3000	RS4 - 4000	RS4 - 6000	RS4 - 1000
Max. Output power					
@ 2 Ohms	4x 500 W	4x 750 W	4x 1000 W	4x 1450 W	4x 2500 W
@ 4 Ohms	4x 400 W	4x 700 W	4x 1000 W	4x 1450 W	4x 2500 W
@ 8 Ohms	4x 400 W	4x 450 W	4x 630 W	4x 1100 W	4x 1400 W
Bridge @ 4 Ohms	2x 1000 W	2x 1500 W	2x 2000 W	2x 2900 W	2x 5000 W
Bridge @ 8 Ohms	2x 800 W	2x 1400 W	2x 2000 W	2x 3000 W	2x 5000 W
High Z					
70V ms / 100V peak	2 x 900 W	-	4x 700 W	4x 1500 W	-
100V ms / 140V peak	-	2x 1400 W	-	4x 800 W	-
Frequency Response Power Bandwidth ± 0.25 dB	20Hz-20kHz				
Phase Response @ 1 watt 20Hz-20kHz	± 15 deg				
Total Harmonic Distortion 20Hz-20kHz	<0.05%				
Intermodulation Distortion SMPTE	<0.05%				
Damping Factor 20-500Hz @ 8 Ohm	>500				
Crosstalk 20Hz-1kHz	>75dB				
Voltage Gain	35 dB	35 dB	35 dB	26 - 40 dB	26 - 40 dB
Sensitivity Rated Power (26/32/28dB Gain)	0.8 V	1.1 V	1.3 V	4.7 to 0,9 V	5.3 V - 1.1 V
Signal-to-Noise Ratio 20Hz-20kHz	101 dBA	103 dBA	104 dBA	105 dBA	107.5 dBA
Required AC Mains Operating Voltage (50Hz-60Hz)	170 V - 265 V AC / 90 V - 140 V AC				
Power On Idling (@ 230V) 1/8 Rated Power @ 4 Ohm (@ 230V)	0.5 A 7 A	0.5 A 8 A	0.5 A 10 A	0.5 A 15 A	0.5 A 16 A
Dimensions W x H x D (mm) W x H x D (inches)	489 x 88.9 x 254 19 x 3.5 x 10			483 x 89 x 320 19 x 3.5 x 12.6	483 x 88.9 x 274 19 x 3.5 x 10.8
Weight Net (kg - lbs)	6.5 - 14.3	6.5 - 14.3	6.5 - 14.3	8.5 - 18.7	8 - 17.6
Protections	Soft-start, Turn-on Turn-off transients, Over-heating, DC, RF, Short-circuit, Open or mismatched loads, ICL™, PMS™ and SSP™				

LYNX PRO AUDIO GUARANTEE

Lynx products are guaranteed against every kind of manufacturing fault 2 year after the date of sale. When products are under guarantee, the repairing and the free supplying of the device parts in order to correct any kind of defect are guaranteed by Lynx Pro Audio S.L. In the case that the product could not be returned to the factory for checking and repairing, Lynx Pro Audio S.L. would supply all the necessary parts.

Lynx Pro Audio S.L. is not responsible for any damage or defect caused during the transport or caused by an undue or improper handling by a non-authorized person during the life of this guarantee.

All our products go through rigorous testing and quality controls. We guarantee the characteristics described here within and their quality against any fabrication defect.

The user loses all warranty rights if he incorporates or carries out any modification to the product, if he uses it outside of the stated safe working loads or does not secure the system properly using all the pins in their corresponding holes.

For any question regarding the product, the user must quote the model and serial number.

WEEE Declaration: Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime. Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product please contact Lynx Pro Audio S.L.



DECLARATION OF CONFORMITY

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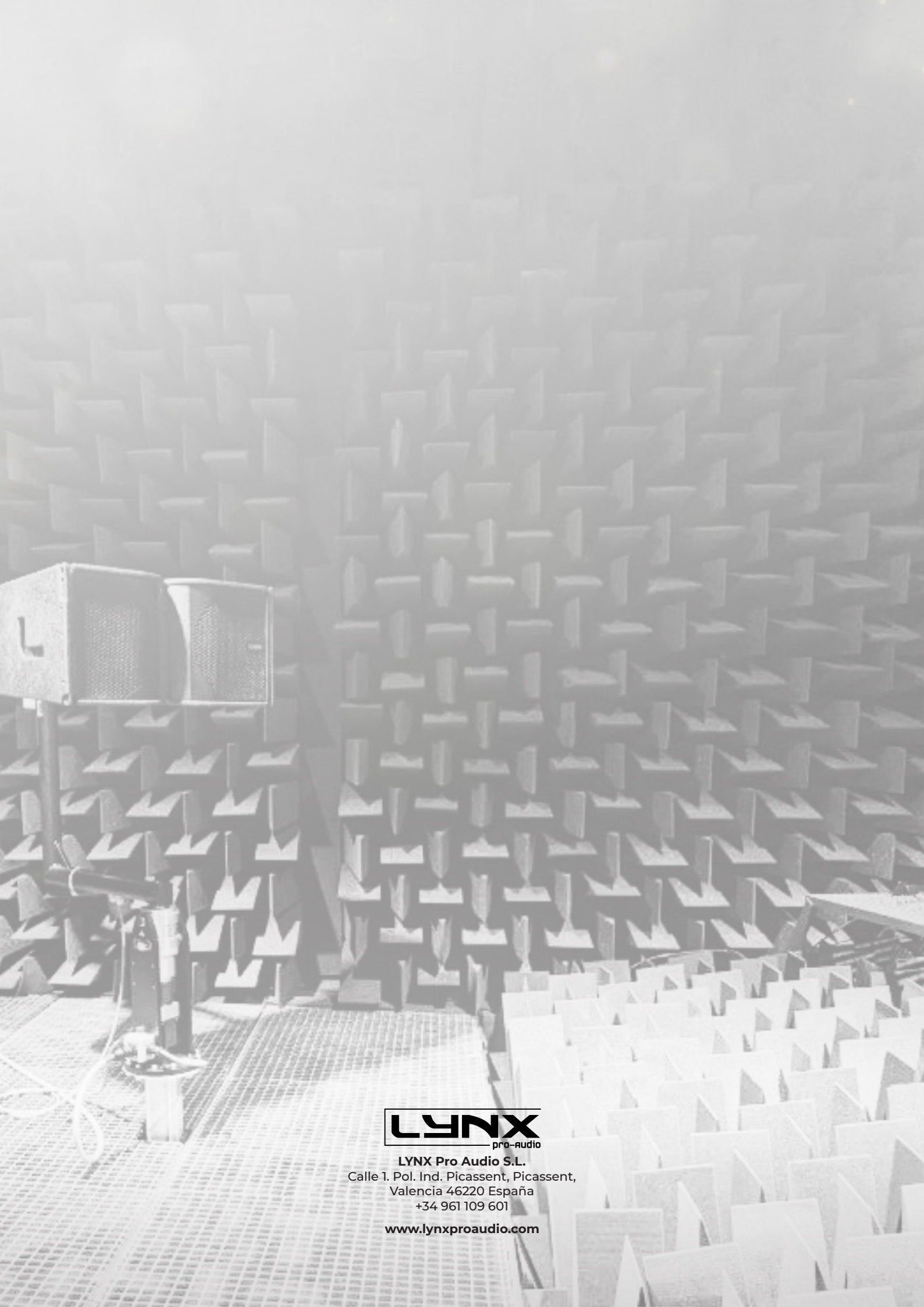
Lynx Pro Audio S.L. declares that RS series are in conformity with the following EC directives:

Low Voltage Directive	2014/35/UE
Electromagnetic Compatibility EMC	2014/30/UE
RoHS Directive	2011/65/UE
RAEE (WEEE)	2012/19/UE

In accordance with Harmonized European Norms:

EN 60065:2014	Audio, video and similar electronic apparatus. Safety requirements
EN 60065:2002	Audio, video and similar electronic apparatus. Safety requirements
EN 55103-1:1996	Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 1: Emission.
EN 55103-2:1996	Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 2: Immunity.





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